DOCUMENT RESUME

ED 394 398 HE 029 089

TITLE	Proposed Master Plan for Higher Education in New Jersey.
INSTITUTION	New Jersey State Commission on Higher Education.
PUB DATE	1 Apr 96
NOTE	48p.; Prepared by the New Jersey Commission on Higher Education Master Plan Steering Committee.
PUB TYPE	Viewpoints (Opinion/Position Papers, Essays, etc.) (120)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Demography; Economic Development; *Higher Education; *Long Range Planning; *Master Plans; Needs Assessment; Resource Allocation; State Legislation; *Statewide Planning; Trend Analysis
IDENTIFIERS	*New Jersey

ABSTRACT

The draft Master Plan was developed in response to requirements of the New Jersey Higher Education Restructuring Act of 1994. The plan proposes a vision and broad policy recommendations for New Jersey higher education into the next century. The focus of the plan is on the critical needs of the state and how higher education can help in addressing them. The plan is organized into four sections. The first section provides data on current demographic, economic, and social characteristics of the state and characteristics of the current higher education system. The second section specifies assumptions about the future underlying recommendations in the following areas: demographic and social conditions; markets, clients, and global factors; the economy; resources; technology, infrastructure, and research; higher education faculty; higher education governance and mission differentiation; and elementary and secondary education. The third section identifies issues and current efforts concerned with: (1) economic growth, (2) education and workforce training, (3) efficient and effective use of public resources, (4) health/health care, (5) environment, and (6) community/social stability. The final section presents recommendations for each of the critical economic and societal needs of the state and also to ensure that higher education is affordable and accessible and that the overall system is excellent, effective, and efficient. An appendix presents an additional brief funding report. (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

HE

ED 394 398

PROPOSED
MASTER PLAN FOR HIGHER EDUCATION IN NEW JERSEY

PREPARED BY
THE NEW JERSEY COMMISSION ON HIGHER EDUCATION
MASTER PLAN STEERING COMMITTEE

APRIL 1, 1996

HE 029 479

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
New Jersey Commission on H.E.
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

BEST COPY AVAILABLE

Members of the Commission on Higher Education's Master Plan Steering Committee

Mr. Joseph D. Williams, Co-Chair
Chair, Commission on Higher Education

Dr. Francis Lawrence, Co-Chair
President, Rutgers, The State University
Chair, Presidents' Council

Dr. Robert Albright
Commission Member

Dr. Stanley Bergen, President
University of Medicine & Dentistry of N.J.

Mr. Alfred Cade
Commission Member

Dr. Saul Fenster, President
N.J. Institute of Technology

Mr. Edward FitzPatrick
Commission Member

Dr. Glen Gabert, President
Hudson County Community College

Dr. Martine Hammond-Paludan
Executive Director
Commission

Dr. Herman James, President
Rowan College of N.J.

Dr. William King
Commission Member

Mr. Donald Loff
Commission Member

Dr. J. Barton Luedeke, President
Rider University

Dr. Robert Messina, President
Burlington County College

Dr. John Noonan, President
Bloomfield College

Dr. Jeanne Oswald
Deputy Executive Director
Commission

Reverend Thomas Peterson, Chancellor
Seton Hall University

Dr. Irvin Reid, President
Montclair State University

Dr. Robert Scott, President
Ramapo College of N.J.

Ms. Gloria Soto
Commission Member

Dr. Edward Yaw, President
County College of Morris

CONTENTS

Introduction	1
Public Hearing Schedule	2
New Jersey Today	3
Assumptions About New Jersey Tomorrow	16
Critical State Issues and Institutional Efforts to Address Them	24
A Vision and Recommendations for Higher Education in New Jersey	30

INTRODUCTION

The Higher Education Restructuring Act of 1994 charges the Commission on Higher Education with developing a comprehensive master plan for higher education. The statute calls for the long-range plan to be updated regularly.

Recognizing that an effective and useful master plan can come only from a comprehensive planning process, the Commission on Higher Education appointed a Steering Committee composed of Commission members and staff and institutional presidents from all sectors to develop a master plan for New Jersey's higher education system. After deliberating for over a year regarding critical state needs and the environment in which higher education will operate until 2005, the Steering Committee developed a draft vision and recommendations for higher education. The proposed Master Plan is provided for public review and comment prior to submission to the Presidents' Council and Commission for consideration in May and adoption of a master plan in June.

The Steering Committee's draft Master Plan does not include a series of specific, prescriptive recommendations. Instead, the plan proposes a vision for higher education into the next century and broad policy recommendations to guide the system in making that vision a reality. The focus of the plan goes beyond the needs of institutions and sectors to consider the critical needs of the state and how higher education can help in addressing them.

The draft Master Plan is organized into four sections: New Jersey Today, Assumptions About New Jersey Tomorrow, Critical State Issues and Institutional Efforts to Address Them, and A Vision and Recommendations for Higher Education in New Jersey. The first three sections provide the background for the vision and recommendations.

The Steering Committee scheduled five public hearings and encourages interested parties to review this document and provide oral comments at one of the hearings or submit written comments by mail or e-mail prior to April 24, 1996. (The hearing schedule and addresses are on the following page.) The Committee will consider all input before proposing a final master plan to the Presidents' Council and Commission in May.

MASTER PLAN STEERING COMMITTEE
PUBLIC HEARINGS

MONDAY, APRIL 15 7:00 p.m.-9:00 p.m.	Livingston College Student Center Piscataway, NJ
TUESDAY, APRIL 16 2:00 p.m.-4:00 p.m.	Camden County College CIM Center Blackwood, NJ
WEDNESDAY, APRIL 17 4:00 p.m.-6:00 p.m.	Georgian Court College Little Theater Lakewood, NJ
WEDNESDAY, APRIL 24 3:00 p.m.-5:00 p.m.	Montclair State University Dickson Hall Upper Montclair, NJ
THURSDAY, APRIL 25 9:00 a.m.-11:00 a.m.	Rider University Student Center Lawrenceville, NJ

Individuals wishing to speak at one of the hearings are asked to sign up at least 48 hours in advance of the hearing by calling the Commission's office at (609) 292-4310. Written comments may be submitted to the Commission on Higher Education Master Plan Steering Committee at CN 542, Trenton, NJ 08625-0542, or sent via E-mail to oswaldj@pilot.njin.net.

NEW JERSEY TODAY

Demographic, Economic, and Social Characteristics

Population

The population of New Jersey was 7.9 million in 1995. The most densely populated counties--Passaic, Bergen, Essex, Hudson, and Union -- are in the northeastern portion of the state. The six most sparsely populated counties -- Salem, Sussex, Hunterdon, Warren, Cumberland, and Cape May -- are located in the northwestern/western portion of the state and in the south.

The racial and ethnic composition of localities in the state varies dramatically. For example, the counties with the highest percentages of African-American residents are Essex (by far the highest with 41%), Union, Mercer, Atlantic, Cumberland, and Camden. By contrast, Sussex County is just 1% African-American, and there are 65 census-designated places throughout the state with no African-American residents.

The Hispanic share of the population by county ranges from 2% in Gloucester to 33% in Hudson. Four of the five counties with double-digit shares of Hispanic residents are in the urban northeast, while Cumberland is in the south. The Asian share of the population by county ranges from less than one-half of one percent in Salem to 7% in Middlesex. Other counties with large concentrations of Asian residents are Hudson, Bergen, Somerset, Morris, and Mercer.

New Jersey has a large immigrant population, as demonstrated by the number of residents who speak languages other than English. The percentage of people who live in households where English is not the primary language spoken ranges from 12% in Salem County to 51% in Hudson County. Most of the counties with high concentrations of non-English-speaking residents are in the northeastern part of the state, while the counties with the lowest percentages are in the rural south or northwest.

Labor Force

The distribution of the state's workforce among the various industrial sectors is not dramatically different from the national profile. Compared with the U.S. as a whole, New Jersey has more nondurable manufacturing and less durable manufacturing. The state also has more workers in the sector consisting of finance, insurance, and real estate. Compared with national averages, New Jersey has higher concentrations of workers in executive,

administrative, managerial, and support occupations, and a lower concentration of workers in the general service category

Proportionally, the northern part of the state has the most workers in manufacturing (durable and nondurable combined), and greater concentrations than other regions in transportation/communication/utilities and finance/insurance/real estate. The shore counties have the highest proportion of workers in service occupations.

Labor Demand Occupations

A labor demand occupation is an occupation for which there is likely to be an excess of demand over supply for adequately trained workers during a period of four years or more beyond the present. Table I lists every occupation that meets this definition for the state as a whole and/or for one or more of three regions within the state. Of the 17 categories included, the health and medicine category has the largest number of demand occupations, while agriculture and agricultural services has the fewest.

Table I:
Broad Labor Demand Occupations in New Jersey,
Statewide and for Each Economic Region

Title	State	North	South	Shore
Agriculture and Agricultural Services				
Gardening and Landscaping Services		X		X
Miscellaneous Agriculture	X	X	X	X
Arts and Entertainment				
Photography		X		
Music				X
Musicians				X
Casino Industry				
Casino Management	X	X	X	X
Casino Support Services	X			X
Casino Floor Personnel	X			X
Construction				
Air Conditioning/Heating Installation/Repair				X
Electrical Power		X		
General Construction	X	X	X	X

Title	State	North	South	Shore	
Design and Drafting					
Architecture					X
Design		X	X	X	X
Interior Design				X	X
Education					
Educational Administration		X	X		X
Counseling					X
Library Assisting		X	X	X	X
Library Science				X	X
Teaching Assisting		X	X	X	X
Engineering and Technology					
Chemical Technology		X	X	X	X
Engineering		X	X	X	X
Photographic Processing		X	X	X	X
Optician		X	X	X	X
Water and Waste Treatment		X	X		X
Equipment Operation and Maintenance					
Aircraft Mechanics			X		
Airplane Piloting		X	X		
Building Maintenance		X	X	X	X
Communication Electronics		X	X		X
Computer/Business Machine Production/Repai		X	X	X	
Construction Equipment Operation		X	X	X	X
Electromechanical Equip/Instrument Product		X	X	X	
Flight Attending		X	X	X	X
Heavy Equipment Repair		X	X	X	
Housekeeping/Building Services		X	X	X	X
Industrial Machinery Repair		X	X	X	X
Jewelry and Watch Repair		X	X	X	X
Power Plant Operation					X
Truck and Bus Driving		X	X	X	X
Water Transportation		X	X		
Food Preparation and Service					
Bartending		X	X	X	X
Chef					X
Dietetics/Nutrition		X	X	X	X
Food Marketing		X	X	X	X
Food Processing/Production		X	X	X	
Food Service		X	X	X	X
Food Service and Lodging Management				X	X
Meatcutting and Butchering		X	X	X	X
Health and Medicine					
Cardiology Technology		X	X		
Dental Assisting		X	X	X	
Dental Hygiene		X		X	X
Dental Laboratory		X	X		
Dentistry		X	X	X	X
Emergency Medical Technology				X	

Title	State	North	South	Shore
Health and Medicine (continued)				
Home Health Assisting		X	X	X	X
Laboratory Technology		X	X	X	X
Licensed Practical Nursing					X
Medical Records					X
Medical Secretary		X	X		X
Medical Services Management				X	
Medicine		X	X	X	X
Mental/Physical Health Assisting		X	X	X	X
Nuclear Medical Technology		X	X		
Nurse Assisting		X	X		
Occupational Therapy		X	X	X	X
Optometry		X	X	X	X
Pharmacy				X	X
Pharmacy Support		X	X	X	X
Physical Therapy		X	X	X	X
Physical Therapy Assisting		X		X	X
Podiatry		X	X	X	X
Psychiatric Assisting		X	X		
Recreational Therapy		X	X		
Respiratory Therapy					X
Social Work					X
Speech Pathology/Audiology				X	X
Veterinary		X	X	X	X
Law and Law Enforcement				
Fire Safety		X	X	X	X
Law Enforcement		X	X	X	X
Legal Assisting		X	X		
Legal Secretary		X	X	X	X
Legal Services					X
Security Services		X	X	X	X
Marketing and Sales				
Fashion Merchandising		X	X	X	X
General Sales and Purchasing		X	X	X	X
General Sales and Purchasing (continued)		X	X	X	X
Insurance		X	X	X	X
Marketing/Advertising/Public Relations		X	X	X	X
Real Estate		X	X	X	X
Securities Sales		X	X	X	X
Management and Office				
Accounting and Financial Management		X	X	X	X
Banking and Bookkeeping Services		X	X		
Clerical Supervision		X	X	X	X
Computer Operation		X	X		
Office Clerical		X	X	X	X
Personnel Management		X	X	X	X
Public Administration		X	X	X	X

Title	State	North	South	Shore
Manufacturing				
Clothing Production	X	X	X	X
Machine Operators	X	X	X	X
Quality Control/Inspection	X	X		
Tool and Die Making	X	X	X	X
Personal Services				
Funeral Services	X	X		X
Home Assisting	X	X	X	X
Hospitality Services	X	X	X	X
Laundry and Drycleaning	X	X	X	X
Recreation	X	X	X	X
Travel Services	X	X	X	X
Printing and Publishing				
Desktop Publishing Equipment Operation	X	X	X	X
Lithography and Platemaking	X	X	X	
Printing Press Operation	X	X		
Typesetting and Composing	X	X	X	
Social and Physical Sciences				
Chemistry	X	X		X
Mathematics	X	X	X	X
Medical Science	X	X	X	
Meteorology and Space Science	X	X	X	X
Quantitative Business Analysis	X	X	X	X
Religion		X		

Variations in Economic Well-Being by Locality

Income levels vary substantially by county. The three counties with the highest median household income--Morris, Somerset, and Hunterdon--are all in the central part of the state. The two counties with the lowest income--Cape May and Cumberland--are both southern and rural. The difference is substantial; median household income in the most affluent county is almost twice that of the poorest county. High levels of poverty are also found in the state's largest cities. For example, Camden has 138 children on AFDC per 1,000 residents and Newark has 93, while 17 municipalities have none at all. High levels of unemployment are found in the cities, as well as in shore areas where many jobs are seasonal.

Educational Attainment and Enrollment

Not surprisingly, educational attainment tends to be lowest in low-income areas of the state. The three counties with the highest levels of educational attainment (Morris, Somerset, and Hunterdon) are the same as those located

at the top of the income continuum. Cumberland County has the lowest rate of attaining a high school diploma, followed by the urban northeast counties of Hudson, Passaic, and Essex.

Overall, New Jerseyans of college-going age are about as likely to be currently enrolled in college as their counterparts nationally. However, the percentage of New Jerseyans with either a bachelor's or associate degree is higher than the national average, suggesting that well-educated individuals move into the state after graduating from college.

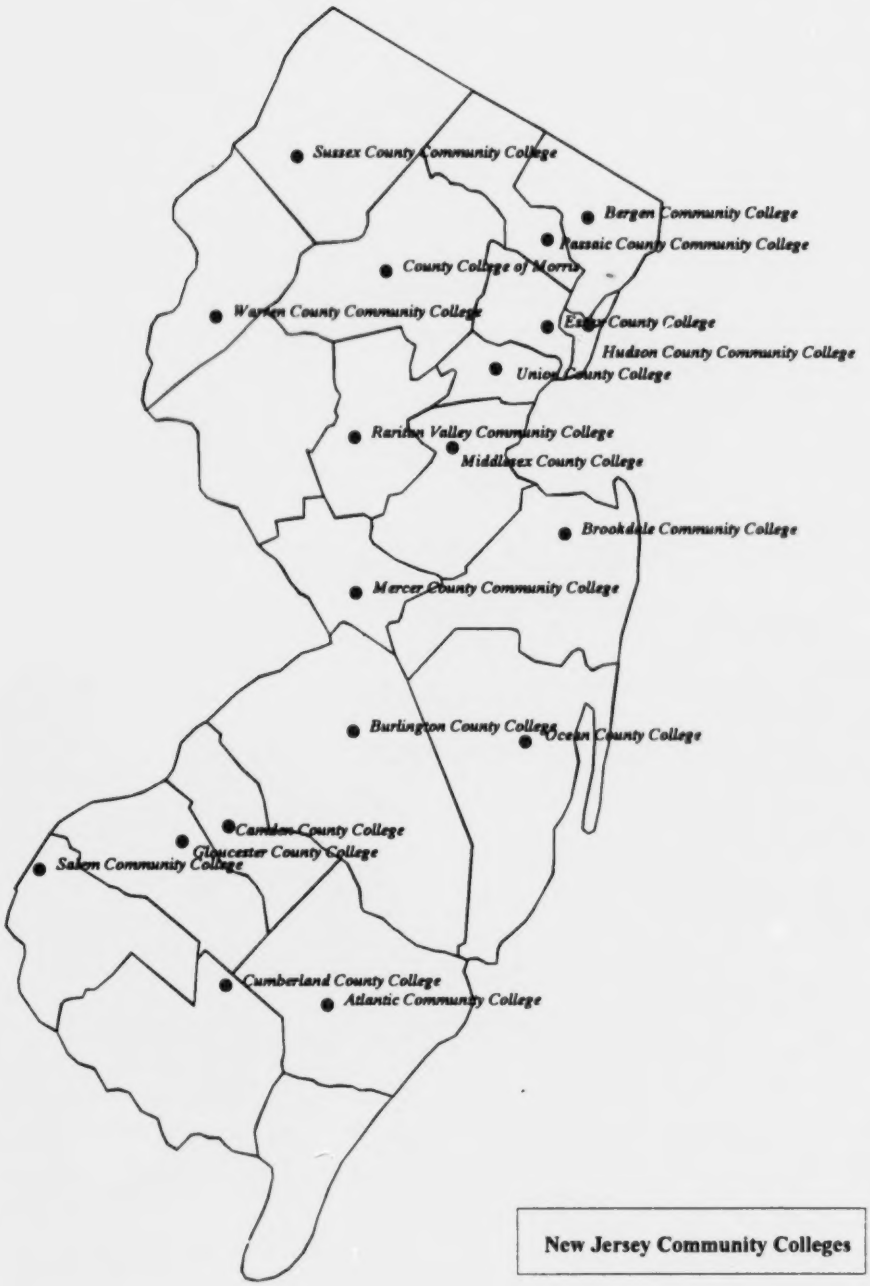
Educational attainment beyond high school tends to be lowest in the rural southern counties of the state--Salem, Cumberland, and Cape May. These counties also have the lowest rates of current college enrollment (combining both in-state and out-of-state). While the most affluent counties have high rates of college enrollment, many of these students tend to enroll in out-of-state institutions. The highest percentages of residents enrolled full time at New Jersey colleges are found in the urban counties of the northeast (particularly Hudson, Passaic, and Union) and in Middlesex.

The New Jersey Higher Education System

Basic Characteristics

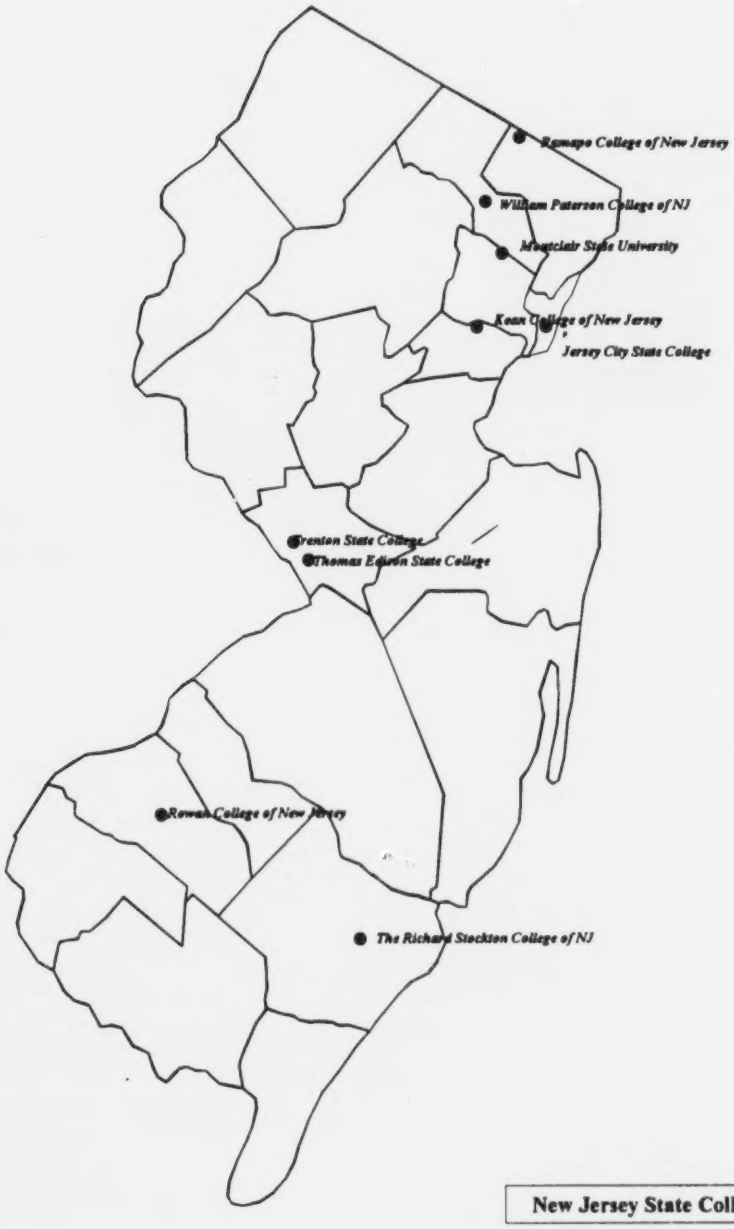
Higher education in New Jersey is a sizable enterprise, whether measured by numbers of institutions and students, or dollars spent on its operation. In fall 1995, New Jersey higher education institutions enrolled 333,000 students at 56 degree-granting institutions. In 1994, the annual budget for higher education totaled more than $3.2 billion.

New Jersey's higher education system includes 19 community colleges; eight state colleges and one public teaching university; three public research universities; and independent institutions including 14 independent four-year colleges and universities with a public mission, three degree-granting proprietary institutions, and eight theological institutions.

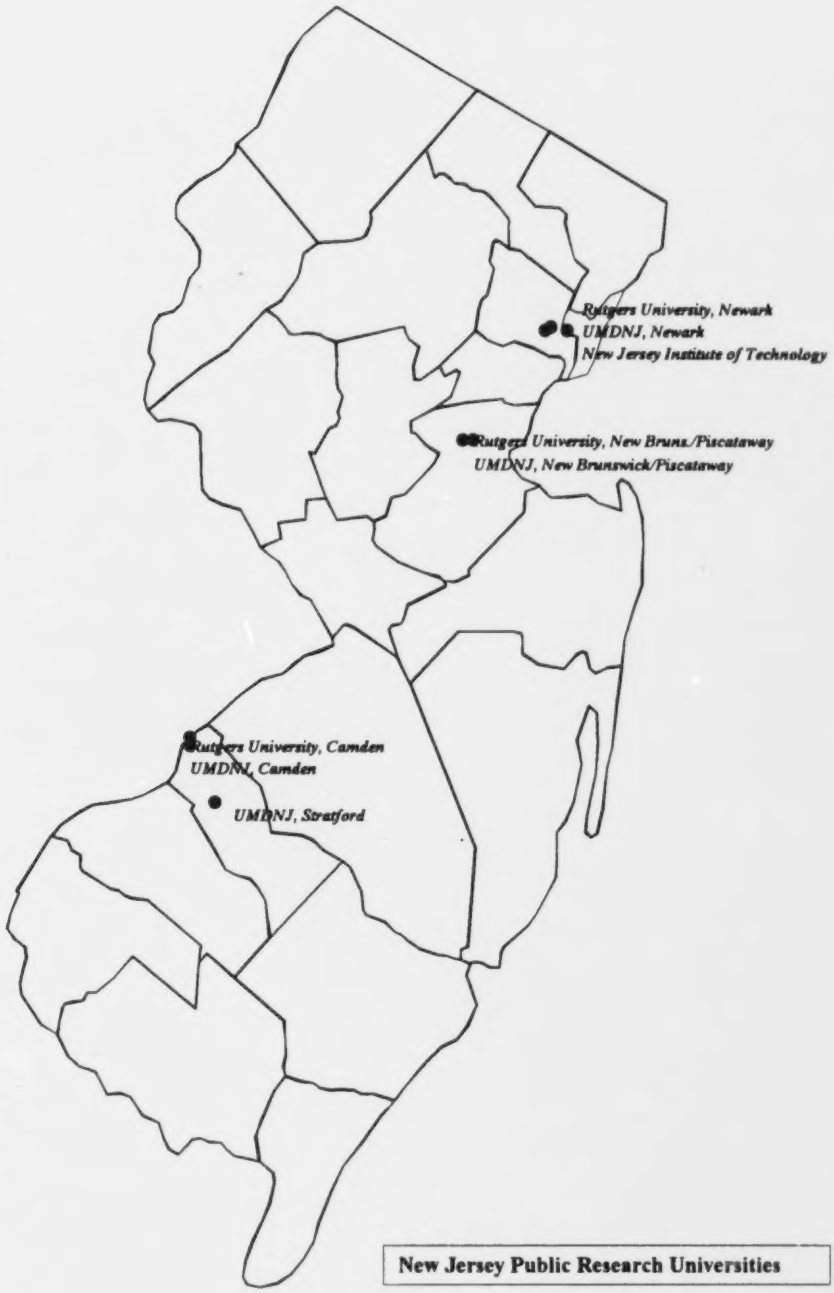


New Jersey Community Colleges

BEST COPY AVAILABLE

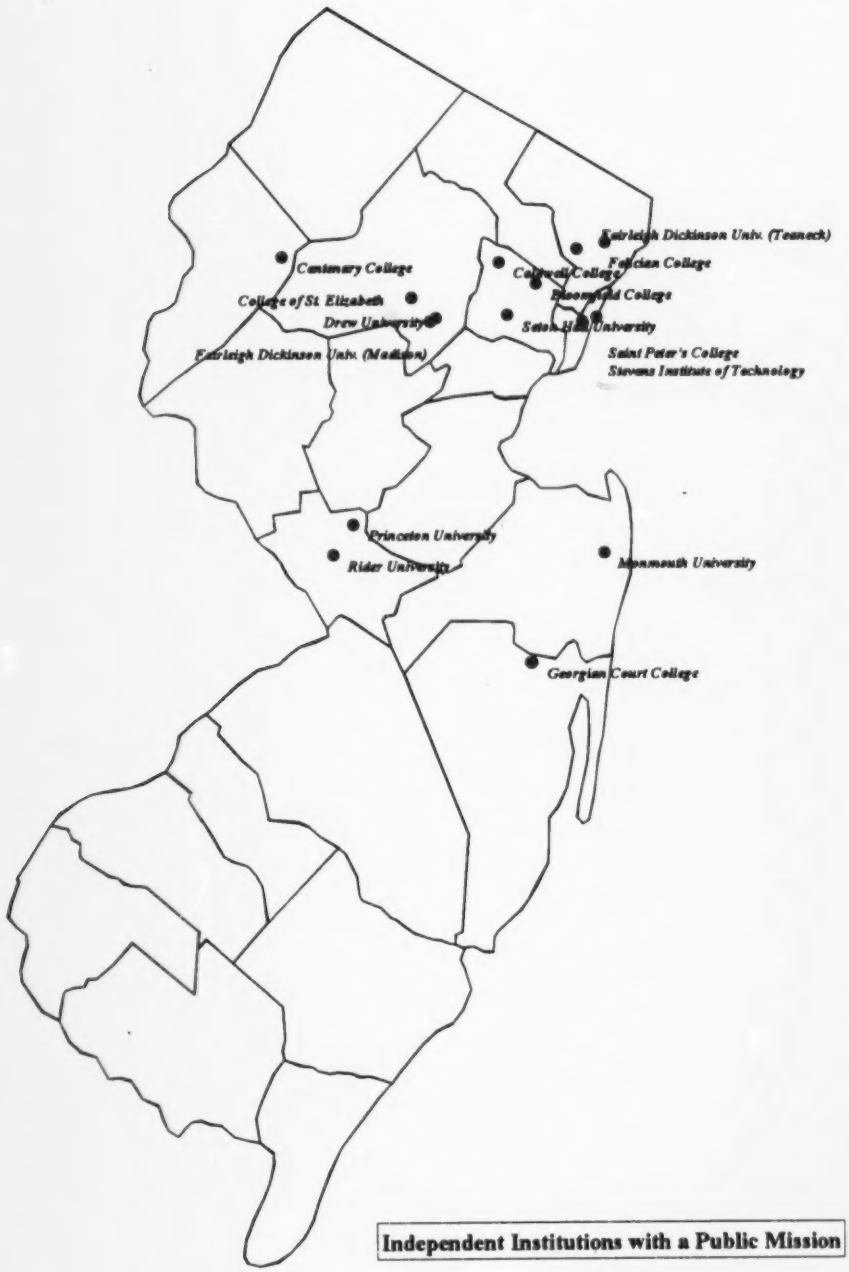

Ramapo College of New Jersey
William Paterson College of NJ
Montclair State University
Kean College of New Jersey
Jersey City State College
Trenton State College
Thomas Edison State College
Rowan College of New Jersey
The Richard Stockton College of NJ

New Jersey State Colleges

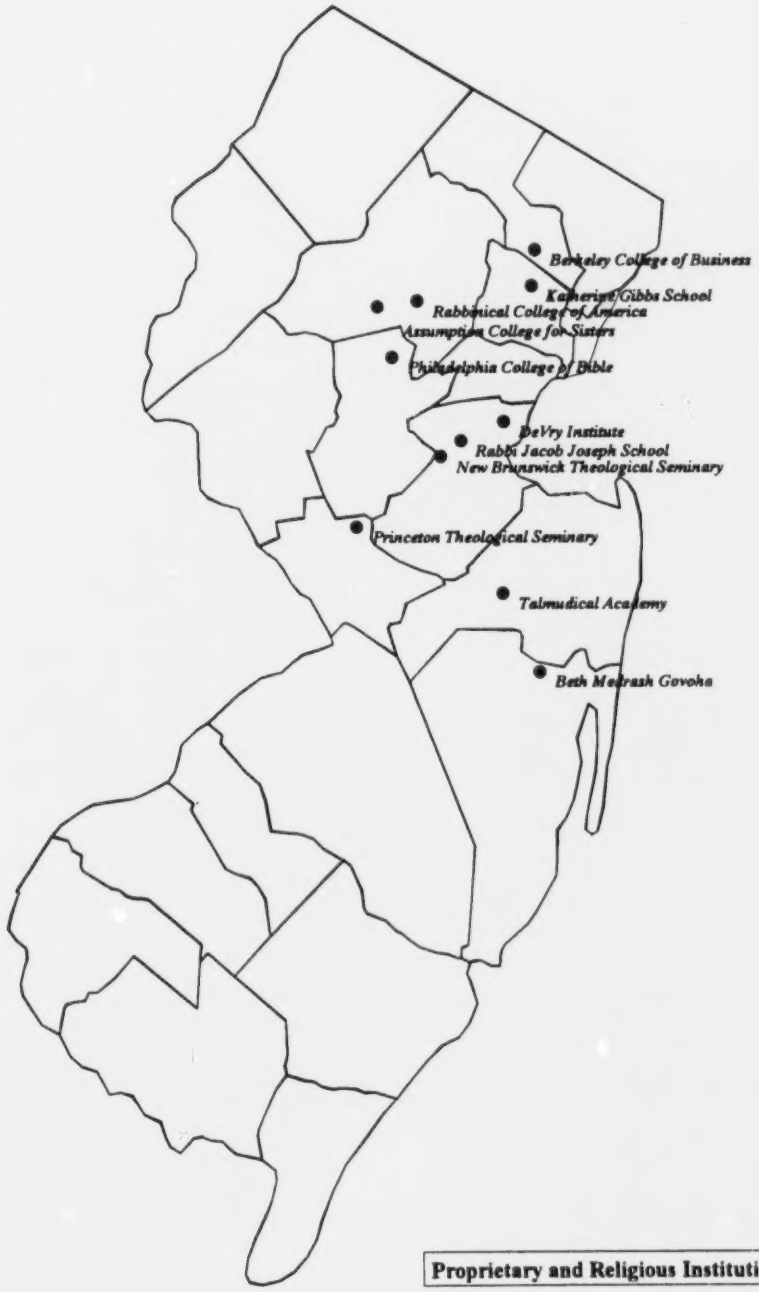


New Jersey Public Research Universities

BEST COPY AVAILABLE



Independent Institutions with a Public Mission


Berkeley College of Business
Katherine Gibbs School
Rabbinical College of America
Assumption College for Sisters
Philadelphia College of Bible
DeVry Institute
Rabbi Jacob Joseph School
New Brunswick Theological Seminary
Princeton Theological Seminary
Talmudical Academy
Beth Medrash Govoha
Proprietary and Religious Institution

The New Jersey higher education system serves about 283,000 undergraduates and 50,000 graduate and first-professional students. Enrollments at the community colleges, the state colleges/teaching university, the public research universities, and the independent institutions are 133,000, 78,000, 60,000, and 62,000, respectively. New Jersey's colleges and universities granted about 50,000 degrees in 1993-94, about half of which were bachelor's degrees. More than one-fourth of all degrees were associate degrees or certificates, and over one-fifth were graduate degrees.

About 9,300 full-time faculty teach at the state's colleges and universities. The number of faculty members is distributed fairly evenly among the four sectors, even though the number of students per sector varies considerably. Current data are not available regarding the number of adjuncts, part-time faculty, and teaching assistants who also provide instruction.

Outmigration

The outmigration rate for New Jersey residents entering all types of institutions is 36%, the fourth highest in the nation. When just those students attending four-year institutions are considered, the rate is 56%. The inmigration rate is 8%, which is the fourth lowest among the states. So, although a large proportion of New Jersey residents attend college elsewhere, the proportion of students that come here from other states is small.

Of the approximately 23,000 New Jersey residents who outmigrated in fall 1992, 96% entered four-year institutions, and 65% of these entered private institutions. Among the states, the most frequent destination was Pennsylvania, followed in descending order by New York, Massachusetts, Virginia, and Maryland. All of the top 11 states are on the East Coast. The most popular institution was the University of Delaware, followed by Villanova University, West Virginia University, Boston University, and the University of Pennsylvania.

Degree Production

New Jersey produces fewer degrees relative to population size than other states and the national average. In part, this reflects the state's high rate of outmigration, but this factor does not explain lower production of degrees at the associate, master's, and doctoral/first-professional levels. The relatively small size of New Jersey's system (in terms of both the number of students and faculty, and the number of institutions) also has a direct impact on the number of degrees conferred per capita.

At the bachelor's level, New Jersey holds its own in the production of computer science degrees, but lags in engineering/architecture, the health sciences, natural sciences, and mathematics. It produces fewer degrees per capita than all seven of the other states in the Middle Atlantic/lower New England region. At the associate level, New Jersey produces fewer degrees than six of the seven other states; at the doctoral/first-professional level, New Jersey produces fewer degrees than five of the states, and is on a par with the other two.

Funding for Higher Education

New Jersey's overall tax capacity (its economic base, adjusted for the relatively high cost of doing business here) is slightly above the national level. Moreover, its overall tax effort (the degree to which the tax capacity is used for all programs of state and local governments) is well above the national level.

While these factors provide a relatively favorable fiscal context, the effort made by state and local governments in New Jersey to fund public higher education is slightly below the national level. The effort made by New Jersey families to fund public higher education (tuition relative to income) is also slightly below the national level. New Jersey does not conform to the typical pattern of compensating for a below-average rank on one measure by being above-average on the other. Consequently, on a combined indicator of family and government support for higher education, New Jersey is considerably below the national benchmark.

Across all sectors (excluding the proprietary schools and religious institutions) institutional revenues, from all sources, per enrolled student are lower in New Jersey than in the nation as a whole. New Jersey's four-year public institutions rely a little less heavily on tuition/fees than their national counterparts, and the independent four-year institutions rely far less heavily on tuition/fees. Community colleges, however, rely more heavily on tuition/fee income than their national counterparts.

With regard to obtaining research funding, the state's research institutions have made enormous strides during the last 10-15 years, in absolute terms, and some progress relative to the nation and other states. However, New Jersey is still below the national average in total research funding per capita, due in part to the small size of the system relative to the state's population. Nevertheless, the state is doing reasonably well in the physical sciences, the geosciences, and in mathematics and computer science, but less well in engineering and the life sciences. Institutions have a good record of providing their own funding for research, but are far behind competitor states and the national average in obtaining federal dollars.

ASSUMPTIONS ABOUT NEW JERSEY TOMORROW

Planning for the future of higher education in New Jersey must consider the projected conditions of the state into the next century. The following assumptions are made recognizing that efforts to intervene could alter conditions.

Demographic and Social Conditions

New Jersey, the ninth most populous state in the nation, will have a population of around 8.3 million in the year 2005, an 8% increase over the 1990 population. A large portion of that growth will be in the "other races" population (i.e., Asian, Pacific Islander, American Indian, Eskimo, and Aleut), which will increase much faster than the white and black populations or the state's population as a whole. The 15-24 year-old group, the primary college-going segment, will increase by about 1.6% overall, but is projected to decline in the urban areas of the state.

The 25-39-year-old age group, another significant clientele for the higher education system, includes the "baby bust" cohort; it will decrease by over 23% by the year 2005, affecting the part-time and continuing education markets. The 40-59-year-old age group will grow by nearly 40% as the "baby boomers" move into this cohort.

While limited growth is expected in the number of 15-24-year-olds between 1990 and 2005, the number of high school graduates is expected to increase by about 1% a year between 1995 and the year 2005. In 2005, this will add 12,000 graduates a year to the 86,000 students who currently graduate from high school annually. This growing college-age population will be increasingly diverse as the number of immigrants in New Jersey continues to grow, increasing pressure to create a truly multicultural society and provide opportunities for historically disenfranchised groups. However, decreased funding for social services may result in diminished access to higher education by academically, socially, and economically disadvantaged segments of the population. Further, the rapidly rising cost of both private and public higher education threatens its accessibility for all students.

A significant portion of the state's students will continue to attend college outside New Jersey. Statistical analysis confirms that the state's small size and relative affluence are related to its high outmigration rate. Type of institution desired also may influence students' decisions to leave the state to attend college.

Several other social conditions will also affect the state and higher education. For example, there will be increased public and political demands on the state budget to combat crime and meet other mandatory obligations. The

number of children born to single parents will continue to be very high, and many single parents will need social services to assist in their transition into the workforce or to a postsecondary education program. The prevalence of substance abuse on college campuses and in society in general will continue. And, there exists the potential for groups outside the mainstream to challenge free speech and academic freedom.

Markets, Clients, and Global Factors

While institutions will continue to serve both traditional and nontraditional students, enrollment growth will be concentrated among those students considered to be nontraditional, such the growing immigrant population and those who return to college for skill development throughout their careers. Also, the demand for programs that require less than two years is likely to grow.

Colleges will continue to focus on life-long learners, as students choose to learn in different ways throughout their lifetimes. Demands will likely shift away from a set number of years of study to flexible, alternative timeframes and funding arrangements that reflect these changes.

Because of rapid demographic, economic, and political shifts, new demands will be placed on higher education for educational programs in critical thinking, studies abroad, women's studies, Latino studies, African-American studies, and bilingual studies. Environmental needs will also create a demand for education and training.

Businesses will need more education and training for employees, and institutions must respond to address those needs. Pressure will continue for colleges and universities to keep pace with technological changes to meet the training needs of employers, particularly in New Jersey's key technology-based industries (e.g., pharmaceuticals and communications). However, it will not be feasible to teach some technological skills in a college setting because the equipment is too expensive for colleges to maintain. Some industries and individual businesses will continue to develop their own classes for workforce training, and may also opt to provide instruction beyond technical skills.

The internationalization of business will increase, with growth in the level of international trade as well as in the number of multinational corporations, corporate partnerships, and scientific consortia. Higher education will be expected to play a critical role in this globalization, initiating and enhancing services to corporate and trade groups, government associations, and volunteer and cultural organizations. Increasingly, global education efforts will focus on the needs of international and multinational companies within the region. Educational programs will require greater levels of sophistication in terms of technology as well as understanding of the transactions that link

all of us to worldwide systems of production, finance, communication, travel, and leisure.

The Economy

New Jersey's employment growth through 2005 is projected to be slower than that of the nation, continuing the long-term trend. However, job growth in the state is expected to increase by 14%, or 509,000 jobs, between 1990 and 2005. Females and minorities are projected to make up the majority of the growth in New Jersey's labor force between 1990 and 2005. Three out of five of the net additions are projected to be females; over two out of five are projected to be persons of "other" races, primarily Asians; and only one out of every 20 net additions is projected to be a white male. Job growth is likely to be in the service-producing sector, particularly in finance, insurance, real estate, business, and health services, requiring extended preparation, often at the baccalaureate level.

Although income growth was expected to dominate the 1990s, as the baby boom moves into its peak earning years, the general national family income is likely to continue to stagnate. Catastrophic economic failures or imminent crises are unlikely, and slow decline through downsizing of the workforce is the more likely scenario. Nevertheless, average annual earnings are expected to continue to be positively related to level of education. Based on 1990 U.S. census data for New Jersey, earnings for those with a bachelor's degree were 69% higher than earnings for those with only a high school diploma, earnings for those with a professional degree were 223% higher, and earnings for those with a doctoral degree were 143% higher. Also, a recent national survey indicates that while there continues to be a very competitive market, there is a projected increase in hiring of college graduates.

As a result, the disparity between the state's wealthiest and poorest citizens is expected to increase. As poverty, concentrated largely in urban areas, fosters negative social conditions and a sense of hopelessness, the gap between New Jersey's "haves" and "have nots" may threaten the stability of the state.

Higher education will play a crucial role in economic development and will continue to be a major generator of economic activity. New knowledge-based technologies will be the basis for the state's future economic growth, and university researchers are expected to provide an important source of discoveries that can be converted into commercial applications. Additionally, technical assistance offered by colleges and universities will continue to be critical to the survival and success of small business and manufacturers with little in-house expertise.

Resources

At best, state revenues will keep pace with nominal growth in incomes, with little or no real growth. State appropriations for higher education are unlikely to increase significantly because the structural imbalance between state revenues and expenditures will remain for the foreseeable future.

At the same time, the state's mandatory health-related, debt-related, and correctional expenditures will continue to grow in real terms, pressuring all other categories of state spending. Spending for elementary and secondary education may also grow in real terms, depending on the state and local response to the Abbott v. Burke decision.

At the local level, the ability of the property tax to support spending increases, including spending for county colleges, will depend largely on an expansion of the tax base (e.g., from new construction). Without such growth, burdens on existing taxpayers will increase, and local governments will feel increased political pressure to hold taxes constant.

New Jersey colleges and universities will continue to rank in the top one-third nationally in tuition, student assistance, and state support per student. However, there will be increased budgetary pressure on direct state and county funding and on state student assistance as a result of fiscal trends. And, despite strong public support, federal student aid programs are also unlikely to grow in real terms (if at all) as the federal government addresses its deficit. When combined with projected increases in enrollment, the likely result of stagnant federal appropriations for student aid will be decreased amounts of aid per student.

With limited increases in state and county funding, strong institutional pressures for marginal revenue growth will produce a continuing trend to increase a wide range of user fees. However, colleges will not be able to offset low growth in government financial support by increasing revenue from these sources alone; they will have to be increasingly diligent in streamlining administration and enhancing instructional productivity, holding down costs, and collaborating with their peers, as well as raising external funds and/or engaging in contract education with business.

Limited resources will demand that institutions pursue innovative ways to satisfy the educational needs and goals of an increasingly diverse and challenged student population in a timely and cost-effective manner. They may redefine the traditional semester system, and are likely to make greater use of team teaching, computer networks, distance learning, and other forms of telecommunications. By necessity, interinstitutional cooperation will also increase. Limited resources will foster improved articulation arrangements between community colleges and four-year institutions. At the same time, limited resources will result in more competition for funds among institutions and among cost centers within an institution. While some institutions

concerned over their future as autonomous and distinct colleges may be reluctant to cooperate in programs that appear to diminish their own identities, collaboration among institutions will become an increasingly important factor when seeking external funding from grant-making agencies, business, and industry.

Technology, Infrastructure, and Research

Technology and institutional infrastructure will be increasingly critical to research, teaching, and the well-being of the entire higher education system. National and international standards for information and the networking infrastructure will be more fully established, and deregulation will spur competition. In New Jersey, state government will proactively promote planning and coordination among education, government, and business. More students will enter college with extensive information network experience; these students and the public will expect colleges and universities to be at the forefront in applying information technologies to teaching and learning.

Within the next several years, all New Jersey colleges and universities, most libraries, and many school systems will be interconnected for interactive video, data, and multimedia functions. Consortial arrangements and distance education will result in the delivery of higher education beyond campus, state, and national borders. Traditional library physical holdings (periodicals, books, and manuscripts) will decline significantly, as vastly distributed data bases and multimedia source materials increase. Desktop workstations available campuswide in offices, laboratories, and dormitory rooms will allow college students to request and receive selected information from periodicals and manuscripts. At the same time, higher education management also will be enhanced by increased access to information technology. Similarly, institutional museums will make their collections more readily available to scholars and the general public, and public exhibitions will continue to become more interactive; progress will be made toward developing on-line and virtual-reality museums.

Such developments in technology and networking will require systemwide and campuswide changes. There will be increased demands for training of faculty, students, and staff and for coordination of networking technology. The extensive interconnections will require a flexible communications infrastructure and enhanced power supply.

The way research is conducted will continue to be profoundly affected by the "knowledge explosion." Transparent access to the "information highway" will be the single most important factor in research activity, increasing both the

global nature of research and the rate at which new knowledge can be developed, absorbed, and disseminated.

The most effective problem solving will be accomplished by team effort. Communication advances will greatly facilitate collaboration among the world's leading scholars and scientists, and interactive capabilities will continue to improve as technology develops further. The focus of cutting-edge research will increasingly be interdisciplinary problem solving.

New technology will have significant fiscal implications. Information technology acquisitions, applications, and training will be expensive, and funding will be accomplished in part through reallocation, such as when library funds for traditional physical holdings are shifted to materials accessible through electronic media. There will be a greater emphasis on funding partnerships for technology, both private/public and intercampus, since federal support will lag.

The overall facility infrastructure across the state also will require significant attention. Efforts will likely focus on redesign to adapt present facilities for new technologies rather than on new construction. The crisis-level deterioration of campus physical plant due to deferred maintenance will require attention to avoid serious implications for institutional programs. Underdevelopment of some campuses, coupled with changing demographics, may require some new construction across the state.

With more scientists and engineers per capita than any other state, New Jersey is expected to continue its role as an international leader in corporate research and development and to maintain a place among the top four states in the number of patents per capita. Higher education will continue to be an important partner in this, with joint efforts between industry and university-based research groups providing substantial cost savings to both. Sharing resources such as people, facilities, and equipment will become a standard operating mode for highly successful efforts, particularly as corporate restructuring occurs and federal government sponsorship of research declines under budget cutting pressures. Universities that have depended on federal revenue for research will look to industry and other sources to replace lost revenues, and may also restructure research enterprises to become more productive and efficient.

The rate of return to the state from its support of technology transfer programs, biomedical research, and business incubators is likely to increase. State investments in science and technology will continue to stimulate fund-raising from other sources, but that leverage factor is likely to yield declining results because of federal budget cuts.

While science and technology will continue to be preeminent in research with industrial application and economic development implications, there also will

be continued need for other research endeavors in the social sciences, education, law, business, the humanities, and the arts that contribute significantly to societal progress and the enhanced quality of life.

Higher Education Faculty

Limited resources, demographics, new technology, and a host of other factors will change faculty working conditions and other customary practices on college campuses and will continue to create pressure to revise the reward structure for faculty.

Public resentment of faculty privileges such as tenure and a limited academic workload will continue to rise. Increasing public debate and controversy will challenge existing tenure practices, and a growing number of institutions will discuss (and perhaps implement) alternative appointment practices, such as term appointments. The way in which faculty workload is defined will likely be modified. And, given the increasing necessity for life-long education, the growing number of nontraditional students, and the pressures on institutions to increase productivity, faculty schedules are likely to be revised to include earlier and later hours, as well as weekends.

Collective bargaining in New Jersey higher education will continue. There will be more local, campus-based control of negotiations and management of labor contracts. However, relations between labor and management are likely to be strained due to funding cut-backs, the need to limit salary increases, and the aforementioned challenges to tenure.

Given the elimination of a mandatory retirement age and the scarcity of new positions, institutions will be challenged to increase faculty diversity and ensure the infusion of young faculty. Institutional responses may include early retirement options, phased-in retirement schedules, or policies for the review of tenured faculty. Increasingly, faculty and staff members will seek retirement incentives. This will create a variety of problems, including new costs to produce turnover and disaffection of those refused retirement incentives.

Higher Education Governance and Mission Differentiation

State and federal agencies and political leaders, accrediting associations, professional organizations, the media, and the public will continue to call for greater accountability from institutions of higher education, particularly with respect to cost efficiency, the quality and utility of services offered, and the competence of graduates. Resource-sharing partnerships and coordinated program development will increase to leverage existing strengths and meet state needs.

Along with increased coordination and cooperation among institutions, achieving quality within reasonable budgetary constraints will increasingly require each institution to reexamine its mission and programs to ensure their responsiveness, fiscal viability, and quality as these relate to teaching, research, and public service. Fiscal constraints will limit mission expansion and increased program development to occurring only within a well-articulated statewide planning context, and when meaningful thresholds of quality are achieved. Some institutions will need to develop unique missions with strong market niches in order to survive the impending competition for resources.

Government oversight is likely to increase if institutions do not work cooperatively to meet the changing needs of society, as well as eliminate unnecessary program duplication. This is likely to concern institutions, who see their pluralism as a major strength of the higher education system. Institutions will be concerned also about local, state, and federal regulatory compliance, as well as the voluntary accreditation process which often subjects institutions to multiple, costly reviews.

Elementary and Secondary Education

Economic and demographic changes also will have tremendous impact at the elementary and secondary level. Schools will begin at the elementary level to prepare students to succeed in a high-tech society. They will increasingly focus on important critical thinking and problem solving skills, and on how to cooperate, as well as compete, in order to cope with the demands of society. Increasingly, K-12 schools will take steps to address the societal forces that affect the ability of children to learn, including such issues as culture, home environment, safety, and health.

Schools will place increasing attention on student learning and outcomes through the use of performance and alternative assessment techniques, and will focus on meeting state and national standards. Colleges and universities will collaborate to a greater degree with their K-12 counterparts and clearly articulate the expectations for admission and the abilities required for success in their institutions. Additionally, the higher education and K-12 communities will work more closely in the preparation of teachers and other school professionals and in resolving issues of common concern.

CRITICAL STATE ISSUES AND INSTITUTIONAL EFFORTS TO ADDRESS THEM

The New Jersey system of higher education is an integral part of the state's overall infrastructure, and as such is dependent upon that infrastructure. Therefore, the critical issues facing New Jersey over the next five to ten years must guide the development of the state's master plan for higher education. Critical state issues were identified by the Master Plan Steering Committee drawing on responses from three focus groups conducted by the Eagleton Institute and composed of community and business leaders; interviews with legislators; survey responses from state agency heads; and a review of two 1993 surveys identifying critical state issues. The six issues on which there was the greatest convergence of opinion are summarized below.

ECONOMIC GROWTH

Maintaining and expanding existing business, attracting new business, and having an adequate state revenue base are essential to a strong economy and the quality of life of citizens. The appropriate physical infrastructure to support business and citizen needs, particularly an adequate transportation system, is critical. A strong economy also depends on a coordinated, reasonable regulatory environment that considers the various interests of the state. Further, a significant aspect of economic growth is the redevelopment of the state's urban areas. Existing massive tracts of decay and deterioration promote crime and create poor living and working conditions and serious social disorders. Revitalizing these areas, with attention to safe housing and neighborhoods and quality education programs, will play a major role in attracting business, creating jobs, improving the quality of life, and addressing the profound gap between the state's wealthiest and poorest citizens.

EDUCATION AND WORKFORCE TRAINING

Improved technological and educational programs are essential to adequately prepare individuals for responsible citizenship and for the workforce of the future in a high-tech, global economy. Effective education and workforce training are necessary to combat unemployment and underemployment which eliminate a significant portion of the population from the economic process and jeopardize the state's social and political stability. All students must be equipped to adapt to changes and develop higher-order thinking and problem solving skills to meet the needs of a dramatically changing work place. The areas of early childhood and parenting education and the education of nontraditional students are of particular concern.

EFFICIENT AND EFFECTIVE USE OF PUBLIC RESOURCES

Limited public resources require effective and efficient governmental operations and educational services. Local and state government, schools, and colleges must better serve their constituencies without significant additional resources. Further, resources must be used more equitably across the state, ensuring that all areas of the state have access to services.

HEALTH/HEALTH CARE

Health and health care issues are of central importance to all citizens. Drug and alcohol abuse threaten both the health and well-being of those directly involved, as well as society as a whole, which is affected by related crimes and lost productivity. Unfunded medical care threatens to engulf the health care industry, particularly those components operating in urban or other less affluent areas.

ENVIRONMENT

Protection of the water supply and other natural resources, conservation of energy, safe disposal of hazardous waste, and clean air are critical to the quality of life. The state must deal with these environmental issues without over regulating business and jeopardizing economic development.

COMMUNITY/SOCIAL STABILITY

The state's social well-being is affected by the incidence of family disorders, child abuse, spousal abuse, hunger, and homelessness. In addition, there is a need to develop a spirit of civility, cooperation, respect, and trust within families and among diverse religious, racial, ethnic, and cultural populations. Gender equity and acceptance of varying lifestyles are also essential.

Current Institutional Efforts to Address Critical State Issues

New Jersey's 56 public and independent higher education institutions offer myriad programs and services that are helping to address New Jersey's most critical needs. Teaching, research, and public service endeavors at each institution make important contributions to the local community and the state as a whole. This overview summarizes the various types of programs and services related to the identified critical needs of the state as reported by institutions in all four sectors.

Economic Growth

New Jersey higher education institutions contribute to the state's economic health and growth in a number of important ways. The primary mission of the higher education system is to develop the human resources needed to fuel

the state's economy. From nondegree programs at the community colleges to advanced degrees at the research universities, New Jersey institutions are developing an educated citizenry and preparing students for careers in the high-tech and globally competitive work place of the 21st century.

Colleges and universities in all sectors also provide direct assistance to New Jersey businesses, helping them to grow and prosper in a competitive economy. Most of the community colleges, as well as several state colleges and research universities, operate centers for small business development and assistance which provide services such as management consulting, workshops, and even "incubators" which help new and small businesses grow. Several institutions provide technical assistance to manufacturing and other firms. In addition, various institutions operate business assistance programs with a specific emphasis, such as entrepreneurship, international business, or real estate development.

Research at New Jersey institutions also makes a vital contribution to the state's economy and makes the state a desirable place for business to locate. Many research universities work directly with industry to undertake research with direct economic impact. Advanced technology centers located at the research universities sponsor research in areas with direct commercial application such as ceramic engineering, food technology, telecommunications, biotechnology, environmental protection, and pharmaceuticals. The institutions focus on the transfer of new technologies to business and industry whenever possible.

Recognizing the vital economic role of New Jersey's cities, a number of institutions make urban revitalization a special part of their mission. In addition to direct efforts to stimulate the economy in some of the state's largest cities, institutions work to address issues such as education and housing, to enhance the quality of life in urban areas.

A total of nine higher education institutions from all four sectors are participating in two new projects funded by the Higher Education Facilities Trust Fund specifically to promote economic development in South Jersey. In January 1996, the Commission on Higher Education approved $5 million from the trust fund for the New Jersey EcoComplex Headquarters and $10 million for the Multi-Institutional Economic Development Network.

Education and Workforce Training

In addition to providing opportunities for students to develop the higher-order thinking, problem solving, and communications skills needed to succeed, the state's higher education institutions offer a wide range of occupational and professional certificate and degree programs at the undergraduate and graduate levels that prepare students for specific careers in various fields.

The county colleges, as well as some senior institutions, provide a wide range of job training and retraining programs, including customized and contract training designed to meet the needs of a specific employer. To accommodate the needs of working adults, many of these programs are offered at night and on weekends; some institutions also offer child care services on campus. Special programs for unemployed/underemployed workers also are offered.

Many county colleges work closely with high schools and area businesses in school-to-work programs that link school- and work-based learning experiences. In addition, institutions in all sectors involve some students in co-op and internship experiences, which provide on-the-job experience while still enrolled in college.

Institutions in all sectors work with business and industry in an effort to help their program offerings better match the needs and standards of employers. Many institutions, particularly the county colleges, are active participants in county-based Workforce Investment Boards (WIBs), which strive to match local training programs with labor market demand.

A number of senior institutions focus on the preparation and continuing professional development of K-12 teachers. Innovative programs at several institutions are geared toward the simultaneous renewal of public schools and teacher education programs.

Many institutions work directly with K-12 schools in an effort to support and strengthen urban, as well as rural and suburban, schools. In addition, they provide numerous opportunities for high school students to participate in educational and cultural programs on campus.

New Jersey colleges and universities emphasize the use of technology as both a learning tool and a necessary skill. Many institutions are using funds available through the Equipment Leasing Fund to purchase state-of-the-art equipment to incorporate technology into their curriculum.

Efficient and Effective Use of Public Resources

New Jersey colleges and universities strive to cut costs without sacrificing quality. Cost savings have been achieved by contracting for services, and by using technology, joint purchasing arrangements, and other innovative approaches. Several institutions have recently undertaken self-studies or worked with outside consultants to identify areas where efficiencies can be achieved.

Most institutions are involved in joint programs, cooperative ventures, and consortial arrangements that enable institutions to offer a wide range of programs in a cost-effective manner with a minimum of duplication. Distance learning and technology are used in some cases to provide easy access to programs on other campuses.

Institutions also work closely with government, community, and public agencies, collaborating on programs and services, as well as providing direct assistance.

Many institutions share resources and/or facilities with K-12 school districts. County-based WIBs are beginning to focus on coordination of vocational, technical, and occupational training programs offered by county colleges and county vocational schools.

Health and Health Care

Institutions in all sectors offer training and preparation for health care careers ranging from technicians and assistants to medical specialists.

Recognizing the growing problems of substance abuse and violence, several institutions offer special programs to train professionals in these areas. Nearly all offer substance abuse and other counseling services to their students; one institution reported providing such services to school districts as well.

Health care research, including biomedical and pharmaceutical research, is a priority at several research universities.

A few institutions make a special effort to provide health information to the community, and the medical university offers direct patient care at four primary hospitals, as well as a number of affiliated hospitals.

Environment

Many institutions offer science and environmental studies programs. One senior public institution operates a residential center for environmental studies within a state forest.

Several colleges and universities undertake research into environmental issues. One university focuses extensively on research on hazardous materials, remediation, and pollution prevention, with an emphasis on industrial application.

Most institutions undertake sound environmental practices, such as recycling and energy conservation, and several have special environmental awareness programs.

Community and Social Stability

Many institutions place a special focus on enhancing and celebrating the ethnic and cultural diversity of students and faculty. Many offer courses and/or programs that focus on diversity and multicultural issues, and several have formal codes or procedures designed to promote harmony on campus. Most institutions have clubs, organizations, or facilities geared toward the particular interests or needs of various cultural and ethnic groups on campus. Several institutions offer multicultural experiences for high school

students. One institution was nationally recognized for curriculum and faculty development in diversity leadership and multiculturalism.

As noted under "Economic Development," a number of institutions are actively involved in urban revitalization. Their efforts to stimulate the economy and improve education and living conditions help to reduce the gap between the state's wealthiest and poorest residents, and enhance community stability.

Programs such as English as a Second Language and literacy training address community needs and contribute to social stability.

Many institutions have community service and/or student volunteer programs that help to address the social needs of the community and the state. These efforts include precollege programs for urban students, students serving as tutors and mentors for high school students, and students using their academic experience to provide community service and/or address community problems. In addition to providing direct medical care, the medical university also provides community services such as counseling, prevention education, and health screening.

Several institutions conduct social science research focused on community stability and social needs. Their faculty members often provide assistance and consultation to community agencies.

Cultural facilities on many campuses serve community needs. A number of institutions allow residents access to their libraries.

A VISION FOR HIGHER EDUCATION IN NEW JERSEY

The following vision for New Jersey higher education, and the elements needed to achieve it, will guide state policy and institutional decision making for the next several years. The vision was shaped by data regarding the system today, assumptions about the future, and critical state needs.

New Jersey's system of public and private colleges and universities, and the quality and availability of their programs, will meet the educational needs of all areas of the state, promoting human resource development and research and providing institutions of choice for both resident and nonresident students. The system will be nationally recognized as a major force for developing the full potential of New Jersey and its people by addressing the state's critical needs and providing educational access to all residents who have the interest and potential to achieve, unconstrained by individual economic limitations.

To fully achieve this vision, the following are essential:

A coordinated higher education system with the appropriate balance between autonomy and accountability at institutions with clearly focused and differentiated missions, operating in the context of a statewide master plan.

Institutions open to change in a competitive and complex world.

Sufficient state funding and support for the vision.

Enhanced effectiveness and efficiency through collaboration, cooperation, and resource sharing.

A statewide communications infrastructure and enhanced application of information technologies to teaching, learning, and research.

Improved student outcomes through collaboration with elementary and secondary education, quality programs and services, and student financial assistance.

Advocacy for higher education that increases awareness of the system's contributions to the state, seeks adequate funding, and provides a forum for discussion of higher education issues.

Increased external funding for research from corporate and federal sources, with the state's assistance in garnering competitive grants and contracts.

RECOMMENDATIONS FOR HIGHER EDUCATION

The vision for higher education links the needs of the state with an innovative, effective system of colleges and universities, because higher education is a critical component for increasing economic development, social stability, and the quality of life for New Jersey citizens. Making the vision for higher education a reality requires a concerted effort on the part of institutions and the state.

The recommendations that follow provide broad policy guidelines and are based on the vision for higher education as well as the preceding data regarding New Jersey today, the assumptions about the future, and the state's critical needs. They are organized under three headings: Addressing the Economic and Societal Needs of the State; Affordable, Accessible Higher Education; and Systemwide Excellence, Effectiveness, and Efficiency. Some of the recommendations require legislation or allocation of resources by the Governor and Legislature. Others will be addressed by institutions or at the state level by the Commission, the Presidents' Council, and other entities.

A periodic review and update of recommendations is essential to track progress and alter the course as needed.

ADDRESSING THE ECONOMIC AND SOCIETAL NEEDS OF THE STATE

New Jersey higher education must be responsive to the needs of the state in the delivery of teaching, research, and public service. Recommendations addressing five of the critical issues facing the state are provided below in the areas of Economic Development, Education and Workforce Training, Health and Health Care, Environmental Preservation, and Community and Social Stability. The sixth issue, Efficient and Effective Use of Public Resources, is addressed throughout the plan's recommendations.

Economic Development

The redevelopment of the state's urban areas is critical to the future quality of life in New Jersey. Identified as a priority by the State Development and Redevelopment Plan and the tri-state Regional Plan Association, urban revitalization is a significant source of future economic growth. Redeveloping the cities can help to attract business and create jobs, improving the quality of urban life and helping to narrow the gap between the state's wealthiest and poorest citizens. The tri-state Regional Plan stresses that the economic health and quality of life of the entire metropolitan area will be determined

by the strength of its urban centers. Without revitalization of the major cities, the once-strong region will not be able to compete in the global economy and will be overtaken by other states and nations. Encouraging new growth in urban areas also will help to restore our cities as cultural, commercial, and social centers, reducing some of the development pressures in suburban and rural areas.

Because New Jersey's cities are vital to the state's future development and economic health, urban revitalization should be a priority for higher education institutions. State incentive funding should be provided to encourage increased collaboration among institutions and private enterprise to attract jobs and capital investment, assist and support redevelopment efforts, and provide educational programs, research, and public service that support the revitalization of the local economy.

University research fuels economic progress and helps to solve both social and technological problems. A strong research infrastructure with the ability to convert new discoveries into commercial applications makes New Jersey an attractive and competitive location for business. However, while research expenditures and funding grew by 74% between 1983 and 1993, New Jersey still trails the nation and competing states in the amount of outside funding it receives for research. Attracting additional research funding would have substantial economic benefit for the state.

Given the importance of higher education research to economic development, the state should assist higher education institutions in building a research infrastructure to attract more federal and industrial contracts and grants.

- **The state should provide resources to improve opportunities for research institutions to compete successfully with out-of-state institutions for competitive grants and contracts.**

- **In an effort to attract more private-sector research funding, higher education institutions should strive to demonstrate their research capabilities to industry. Concurrently, the Governor and Legislature should lend their influence and prestige to a "New Jersey First" campaign to encourage corporations, as well as small businesses, to tap the research capabilities of New Jersey institutions, wherever they are competitive, rather than contracting with out-of-state institutions.**

Education and Workforce Training

To compete in a competitive, high-tech, global economy, the workforce will need higher-order thinking, problem solving, and communications skills, as well as specialized and technical training. Meeting these challenges begins at the elementary and secondary level, where schools will place increasing attention on student learning and outcomes with the implementation of core curriculum standards and new methods to assess performance.

In light of the importance of K-12 outcomes for preparing future higher education students, the workforce, and an educated citizenry, the Commission on Higher Education should work with the Department of Education, and higher education institutions should partner with K-12 districts/schools, to ensure simultaneous renewal of teacher training programs, professional development, curriculum, and instructional practices. Early childhood and parenting education should also be a priority for collaborative efforts.

- **Higher education institutions should make reform of teacher education and professional development a priority.**

- **The Commission should encourage broad community involvement in education, such as "K-16 councils" which involve educators, parents, business, and civic leaders in collaborative efforts to implement reform at all levels of the education system, from kindergarten through college.**

Higher education institutions must respond to the increasing demands of the work place, producing highly prepared graduates. However, as technology advances, the workforce will need continuous retraining. In addition to producing well-prepared graduates, higher education institutions must also provide training and retraining programs that meets the needs of employers and workers. While New Jersey colleges and universities already provide a wide range of continuing education, professional development, and training and retraining programs, a recent survey of employers indicated that the higher education system should be more responsive to the needs of employers in this area.

To better meet employers' needs for entry-level workers, higher education institutions should increase the focus on the skills and personal qualities most valued by employers and provide more opportunities for experience-based learning, such as internships.

To better meet employers' needs for training and retraining programs, institutions should allow employers to design programs and curricula that are responsive to their specific needs. Also, institutions should provide more information to employers about how the higher education system can address their needs.

Rapidly changing demands create a continuing challenge for higher education to meet workforce needs effectively. Further, surpluses and shortages that occur within the labor market are difficult to respond to in a timely fashion with the appropriate number of well-prepared college graduates (or trained personnel).

In order to meet higher education needs in all areas of the state, current and proposed degree and certificate programs at all levels, including graduate and professional degree programs, should be evaluated in relation to projected labor demands and regional needs. New programs should be established only where program quality and a need for additional graduates is demonstrated.

Health/Health Care

Institutions in all sectors provide education and training for health care workers. UMDNJ has special responsibilities for medical, dental, and allied health programs and research. The university also provides direct patient care. Ongoing changes in medical practice, government programs, and the health needs of citizens create significant challenges, and suggest that the state may soon face a surplus of physicians and hospital beds. These factors affect the numbers and types of educational programs needed for physicians, both at the undergraduate and graduate medical education level, and for other health professionals.

Based on recommendations by the Advisory Graduate Medical Education Council, there should be a statewide initiative to reduce the number of residents, decrease the percent of residency positions filled by international medical graduates, and achieve an appropriate balance between primary and specialty care. Teaching hospitals should reduce reliance on residents as low-cost providers and seek other ways to provide cost-effective services.

Institutions should reexamine and prioritize instructional health care programs, and continue coordination with other institutions, to

ensure that programs are cost-effective and that offerings address the state's health care needs. Preparation of students should emphasize primary care and allied health programs such as nurse practitioner and physician assistants, etc.

In addition to delivering services cost-effectively, the high cost of health care can be addressed by educating individuals about disease prevention and by promoting prenatal care and healthy lifestyles.

Higher education institutions should address prevention in health care programs and work proactively to provide information and education to communities on health-related issues.

Environment

Protection of the environment is critical to preserving New Jersey's quality of life. Higher education plays an important role in advancing environmental research and technology development, and in raising awareness about environmental issues.

Higher education institutions should make the remediation of environmental hazards a priority issue for research, and include environmental studies in the curriculum.

Higher education institutions should stress environmental preservation as a value, and should provide strong leadership on campus and within the larger community that encourages students and citizens to take pride in their surroundings and protect natural resources.

Community/Social Stability

As New Jersey's population has become increasingly diverse, so too have campus communities, with growing numbers of minority and foreign-born students. On campus, and in the larger community, there is a need to bring together diverse populations and promote a sense of harmony and respect.

Campus administrators, faculty members, and boards of trustees should provide strong leadership, both on campus and in the larger community, in an effort to foster a spirit of civility and respect among religious, racial, ethnic, and language groups. Institutions should stress cultural diversity as a value and offer academic programs and student services that invite students (at all levels) onto their campuses to celebrate the richness of various cultures.

Higher education institutions are uniquely equipped to help the state and local communities identify solutions to prevalent social issues. They conduct social science research and provide public service to address issues such as hunger, homelessness, crime, substance abuse, and violence. Higher education institutions play a unique role within their host communities, often serving as leaders or focal points for community initiatives.

The Presidents' Council should appoint a task force composed of community leaders and college and university social scientists to identify specific research and public service efforts that could be undertaken by higher education institutions to make substantial contributions to the social health of the state.

AFFORDABLE, ACCESSIBLE HIGHER EDUCATION

Across the nation, states struggle with limited resources and rising costs of government. As a result, higher education faces increasingly fierce competition for scarce discretionary funding. Significant increases in public tuition and fees are directly related to limited state resources, because the revenue to support higher education comes primarily from the government and student tuition and fees. When adjusted for cost of living, New Jersey ranks in the top one-third nationally in state support per student. In unadjusted dollars, New Jersey also ranks in the top one-third in dollars from tuition and student assistance. In order to ensure accessibility, the recommendations in the following areas address the maintenance of affordable tuition and fees for residents attending college in New Jersey.

The overall cost to operate a college or university is a major factor in the cost of attending college. Therefore, institutional cost-containment and resourcefulness is essential to affordable, accessible higher education. As resources become increasingly scarce, institutions will have to be diligent in streamlining administration, enhancing instructional productivity, holding down costs, and collaborating with their peers and the private sector. Changes in the way things have traditionally been done are called for, as are difficult decisions to discontinue high-cost and poorly enrolled programs, as well as programs for which there is limited demand for graduates, while focusing more specifically on state and institutional priorities.

Cost efficiency in providing high-quality programs and services should be enhanced at every institution. Institutions should

continually reevaluate program offerings and organizational structures, including administrative procedures and student services, in order to cost-effectively enhance the quality of the institution, promote student access, and meet state needs. And, in order to promote greater institutional flexibility, current faculty appointment policies and procedures should be examined by each institution or by sectors.

In October 1995, the Commission on Higher Education adopted recommendations for funding higher education which stressed the importance of a cost-sharing partnership between the state and students and their families, based on the significant benefit of higher education to both the student and society. (See Appendix A for summary of recommendations.)

The state should move toward the Commission on Higher Education's funding recommendations issued in October 1995 which focused on:

- **an appropriate partnership of shared responsibility for higher education among students, government, and the institutions;**
- **adequate and predictable operating support for each sector as well as sector-specific capital funding support; and**
- **a continued commitment to student assistance programs, with an emphasis on need-based, full-time undergraduate aid.**

A subgroup of the Master Plan Steering Committee studied mission-based (formula) funding as requested in the Commission's funding report. The subgroup concluded that formula funding is viable, but it is very costly in time and personnel to develop and to follow. In addition, funding formulas are often established, but not adhered to as a result of fiscal constraints and competing needs for limited state resources. The Committee, therefore, does not recommend formula funding.

Over one-third of all students entering the state's public colleges and universities lack proficiency in reading or writing and in math computation; over half are lacking in elementary algebra. Lack of adequate preparation is a barrier to access to higher education, and the cost of providing remediation to underprepared students is estimated at about $50 million annually.

While many of these students' remediation needs can be addressed in a semester or two while they pursue their regular academic programs, severe remediation and literacy needs must be addressed before students begin college-level studies. Literacy and basic skills training are offered in a number of settings, including colleges, and are funded through a variety of mechanisms.

Since severe remediation and literacy needs must be addressed before pursuing a postsecondary degree, this process should be conducted outside the regular higher education funding structure. The Commission and the Departments of Education and Labor should jointly appoint a task force to examine literacy and remediation programs serving severely underprepared students and recommend how services and funding can be coordinated most efficiently and effectively to serve the needs of the state.

- **A preadmissions test for higher education should determine if students are prepared, moderately underprepared, or severely underprepared in the three basic skill areas. Before moving on to postsecondary education, students who are severely underprepared in more than one basic skill area should receive remediation delivered and funded as determined by the task force.**

The Tuition Aid Grant (TAG) Program currently helps make higher education accessible and affordable to over 60,000 state residents, and is considered by many nationally to be a model for need-based state student financial assistance. However the rapidly escalating cost of the TAG program, which grew from $75 million in fiscal year 1991 to $135 million in fiscal year 1996, raises issues for the future.

Recognizing fiscal constraints and the state's goal of maintaining affordable, accessible higher education, the Commission on Higher Education, in consultation with the Student Assistance Board and the Presidents' Council, should examine, in the context of other state and federal aid programs, the overall funding structure of the TAG program. The program examination should provide a recommended funding structure for tuition assistance within the New Jersey higher education system to effectively meet the needs of the state and its changing population.

Along with TAG, the Educational Opportunity Fund (EOF) Program for economically and educationally disadvantaged students also helps make

higher education affordable and accessible. Over 13,000 students are currently assisted through EOF, which provided over $30 million in state funds in fiscal year 1996. It is essential that the state dollars dedicated to each of these programs are used most effectively to assist students who are committed to furthering their education.

The Student Assistance Board (SAB) and the EOF Board should review academic progress requirements for TAG and EOF students to ensure that annual grants are renewed only for students who progress sufficiently each semester to warrant continued state funding.

As state funds are provided for TAG and EOF students to attend institutions, it is important that students use those funds at an institution that will effectively meet their needs. If these students attend an institution that has poor academic outcomes for TAG and EOF students, state dollars are not well spent and students are not well served.

Institutions should meet minimum group expectations for the academic progress of TAG and EOF students.

- **Institutions should establish and monitor the average academic progress of students receiving TAG and EOF funds.**

- **The Commission, in conjunction with the Presidents' Council, the EOF Board, and the SAB, should determine minimum group expectations for the academic progress of TAG and EOF students. Institutions falling below that minimum should implement a plan for improvement in order to continue eligibility to receive students who are supported by TAG and EOF funds.**

SYSTEMWIDE EXCELLENCE, EFFECTIVENESS, AND EFFICIENCY

Graduation rates are an important measure of institutions' success in preparing students for careers in a competitive economy. Therefore, institutions should continue to focus on improving graduation rates for all students who are in degree programs. In spite of the state's ongoing efforts, equal access to and success in higher education for New Jersey's neediest students, underprepared students, and minorities are often elusive. Performance indicators in these areas provide partial evidence of some

success in fulfilling important state goals. Nevertheless, there are data indicating significant differences between graduation rates for minority students and those for white students in all sectors. Similarly, graduation rates are also lower for students from the lowest income brackets.

Increasing graduation rates for all students, particularly for minority and economically disadvantaged students, should be a statewide priority. Competitive incentive funding should be provided to institutions that demonstrate outstanding performance or significant improvement in assisting minority and economically disadvantaged students to graduate or transfer successfully to four-year institutions.

Significant developments in technology and networking, coupled with increased demand for distance learning opportunities, require systemwide and campuswide changes. Technology training for faculty, students, and staff is essential, as is coordination of services.

The technological infrastructure between and within institutions should be enhanced to put higher education in the forefront of applying information technologies to teaching, learning, and research. Future Equipment Leasing Fund allocations should be prioritized to assist in this effort. Further, institutions should collaborate in establishing regional centers for higher-order preparation of faculty in the use of technology.

The transfer of courses and programs from one institution to another is particularly important to students, and successful transfer saves money and time for students and the state. The Presidents' Council encourages interinstitutional transfer and articulation, and is developing criteria for "full faith and credit" transfer agreements between county colleges and other institutions of higher education. To further facilitate course and program transfers:

The Presidents' Council should establish a task force to develop a computerized system for information on the transferability of courses and programs between New Jersey institutions of higher education.

Based on the demographic data, demand for higher education will increase steadily in New Jersey, but increases will be limited compared with many other states. Student demand and institutional location are not always

coordinated, but a need for new institutions is not envisioned in light of new technologies, distance learning, and interinstitutional cooperation. However, to ensure sufficient capacity and appropriate higher education programs across the state through 2005:

The Commission should appoint a special task force to examine the structure of the system and its ability to meet the needs of the state, especially in educationally underserved areas. Information on programs by level and location should be considered, along with clearly focused and differentiated institutional missions. As proposals to meet citizen and employer needs are developed and evaluated, the financial and educational impact on quality, efficiency, and effectiveness should guide decisions.

Statistical analysis confirms that New Jersey's small geographic area and relative affluence are related to the state's long-standing atypical pattern of high outmigration and low inmigration of college students. In addition, while New Jersey has a diverse mix of higher education institutions, there is a limited number of highly selective institutions which often are desired by the state's highest-achieving high school graduates. Consequently, many of the state's most affluent and well-prepared graduates select public and independent institutions outside New Jersey. A limited number of institutions with a higher level of prominence and selectivity would increase the choice available to the state's accomplished high school graduates seeking higher education, and would attract more high-achieving nonresidents as well.

Some of the state's four-year institutions should consider enhancing their prominence and selectivity in order to further develop the diversity and quality of the state's higher education system and attract a larger number of New Jersey's best and brightest students, as well as accomplished out-of-state students.

State resources for higher education are limited and institutional missions should be clearly focused and differentiated to effectively and efficiently meet the state's needs.

In order to utilize limited state funding most effectively, expansion of institutional missions should be considered only in the context of statewide needs, as well as program and institutional quality.

Institutions of different types and across sectors should form partnerships for resource sharing and coordination in program

development and delivery, recognizing that complementary programs and services serve students effectively and economically.

Institutions, for the most part, determine what will be supported with the funds provided by the state. Some special-purpose funds also are provided by the state, but they often are not connected systematically to state objectives. Dedication of additional state funds to address statewide priorities would direct institutional attention to central state concerns while maintaining local autonomy and the necessary base operating funds to run institutions.

Additional state funding equal to a small percentage of the state budget for higher education should be appropriated for competitive incentive funding for institutions to address state priorities as recommended in the areas of improved graduation rates, urban revitalization, and research infrastructure.

CONCLUSION

The Proposed Master Plan for Higher Education in New Jersey is based on assumptions about New Jersey's future and critical state needs. It is designed to make New Jersey's higher education system a major force for developing the full potential of the state and its citizens through high-quality, affordable postsecondary education.

The proposed broad policy recommendations emphasize the importance of cost-effectiveness, collaboration, and quality. They address needs for New Jersey's economic development, workforce training, health, environmental preservation, and community and social stability, while recognizing the importance of the effective use of public resources. Realization of the vision for higher education requires a coordinated system of institutions with an appropriate balance between autonomy and accountability. Institutions must clearly focus and differentiate missions, while operating in the context of the master plan.

APPENDIX A

SUMMARY OF COMMISSION ON HIGHER EDUCATION FUNDING REPORT

The Commission on Higher Education was guided by the statewide goals for higher education -- accessibility and affordability, institutional excellence, and accountability. Certain assumptions about New Jersey's social, political, and economic environment provide the context for the panel's deliberations. With a growing and increasingly diverse population, New Jersey higher education faces difficult challenges to meet the workforce needs of the future. Funding austerity due to greater demands on the state budget is likely to continue despite the increasing pressures on the higher education system caused by projected growth in enrollments, more students requiring remedial education and English language skills, a growing need for student financial assistance, and increasing state needs. The additional financial burden of maintaining the infrastructure and keeping pace with technological changes further exacerbates the situation.

The Funding Partnership for Educational Operating Costs:

From a systemwide perspective, the Commission reaffirms the long-standing policy of a cost-sharing partnership between the state and students and their families based on the significant benefit of the degree to both the student and society. As partners, institutions are called upon to establish clearly defined mission statements and provide evidence of resource sharing, institutional efficiencies, the receipt of private funds, programmatic quality, and infrastructure maintenance. Although state appropriations must be made annually, the practice of multi-year budgeting is recommended to enhance fiscal planning and management efforts.

For **senior public institutions**, the Commission recommends a more complete statement of educational operating costs, to include previously identified items plus fringe benefits, salary increases, and student fee-supported educational services. A funding partnership in which the state assumes greater responsibility by contributing approximately two-thirds of educational operating costs, with students and their families paying one-third, is endorsed by the Commission.

The Commission recommends that the state's share of educational operating costs for the **community college sector** be increased to 33%, to be phased in over five to seven years. A 33% share is also recommended for the sectorwide county and student/family components. The partners' shares currently vary widely from college to college, and the recommendations apply only to the sector as a whole.

In the cases of **both the senior public institutions and the county college sector**, the Commission recognizes that it is unrealistic to expect the state and students to commit to a fixed percentage share of uncontrolled costs. Therefore, until adequacy of funding and mission differentiation issues are explored through the master planning process, increases in educational operating costs should be limited to inflationary costs on current

BEST COPY AVAILABLE

operations and negotiated salary and benefit agreements. New programs or initiatives should be funded through reallocations or private funds. Expansion of programs and services should only be funded within the framework of institutional mission and planning and the higher education master plan.

The Commission recommends that state support for the **independent sector** gradually increase to the amount it would receive if the statutory formula allocation were fully funded. This recommendation recognizes that these institutions help meet public policy goals at a significant savings compared with what would be the cost to the state to increase the capacity of public institutions.

Capital Funding:

The Commission recommends continuation and enhancement of the Higher Education Facilities Trust Fund and the Equipment Leasing Fund. However, these programs will not address the overwhelming backlog of maintenance and renewal projects at institutions. Therefore, the Commission proposes a state commitment to fund a five-year facilities renewal program for the senior public institutions and additional Chapter 12 state bonding capacity for county college facilities renewal. The Commission proposes that institutions also provide a share of the funds for facilities renewal.

Student Assistance:

The Commission recommends continued support for state student assistance programs with a focus on undergraduate assistance to maintain affordability, access, and choice for New Jersey students. The panel recommends annual increases in state appropriations for TAG and EOF grants recognizing annual cost increases. The panel proposes more efficient and effective use of current funding, where possible, and assessments to determine what changes, if any, might be necessary for programs to better meet their goals.